

Web server. Simplified.

Publish your building automation system to the Web quickly and easily with the Reliable Controls® MACH-ProWebCom™. The first 3-in-1 device of its kind, the MACH-ProWebCom combines a BTL-listed BACnet® Building Controller (B-BC), a BTL-listed BACnet Operator Workstation (B-OWS), and a powerful web server into a single package with an installed footprint of a typical building controller.



Better by design

TECH SPECS

Processor

- 147 MHz, high-performance, 32-bit embedded microcontroller

Memory

- 8 MB operating RAM
- 1 MB non-volatile RAM (trends and dynamic values)
- 256 MB Flash EEPROM operating system, database, JavaScript, graphics, and controller configuration

Supply Voltages

- 24 VAC ±10% 20 VA max. 50/60 Hz
- 24 VDC ±10% 4 W max.

Communications

- IEEE 802.3 Ethernet 10/100 BaseT
- 2 EIA-485 @ 76.8 kbps max.
- 1 EIA-232 @ 115.2 kbps max. PC or modem
- SMART-Net port @ 16 sensors max.

Browser Support

- Chrome, Edge, Firefox, IE 8 or greater, Safari
- JavaScript must be enabled on client
- Flash required for animations and flood fill

Expansion Modules

- Up to 8 MACH-ProPoint expansion modules

Real-Time Clock

- ± 1 second per day

Memory/RTC Backup

- 72 hour backup
- 10 years for database

Wiring Terminals

- 12 to 22AWG (3.31 mm² to 0.33 mm²)
- Stranded or solid core
- Copper conductors only

Dimensions

- 15.2 cm L x 13.7 cm W x 3.9 cm H (5 15/16" L x 5 3/8" W x 1 1/2" H)

Mounting

- #8 clearance holes on 12.7 cm L x 11.0 cm W (5" L x 4 5/16" W)
- Screw depth 25 mm (1")

Weight

- 0.25 kg (0.6 lb.)

Ambient Limits

- Operating: -20 °C to 55 °C (-4 °F to 131 °F)
- Shipping: -40 °C to 60 °C (-40 °F to 140 °F)
- Humidity: 10% to 90% RH non-condensing

FEATURES

Protocol

- BACnet®
 - B/IP x 2, Ethernet, MS/TP x 2, and PTP
- DHCP
 - Dynamic Host Configuration Protocol
- HTTP/1.1
 - Hyper Text Transfer Protocol
- Modbus
 - Supports both RTU and TCP communications in slave mode and master mode with up to 128 slave devices
- SMTP
 - Provides standard email communications for broadcasting email alarms
 - Supports TLS/SSL security
- SNMP
 - Simple Network Management Protocol
- SNTP
 - Simple Network Time Protocol

Inputs and Outputs

- Up to 8 MACH-ProPoint expansion modules
- Maximum possible inputs of 192
- Maximum possible outputs of 128

1024 Variables

- Selectable standard and custom ranges, as well as fixed program-driven values

128 PID Loops

- Standard P, PI, or PID controllers for closed loop control

128 Schedules

- 14 On/Off times for each weekday or exception

32 Calendars

- Days of the year designated as holidays

20 Custom Tables

- For creating custom scaling functions

64 System Groups

- Allows related points to be grouped onto one display
- 160 points/group

128 Control-BASIC™ Programs

- User programmable control strategy in a readable, BASIC-like language
- 3200 bytes per program

Trend Logs

- Each Trend Log stores up to 8 points
- Values recorded at user-defined intervals
- Dynamically assigned

Runtime Logs

- Totals the On time and records the On/Off times of every binary point
- Dynamically assigned

128 Variable Arrays

- Up to 128 elements in a one-dimensional array

128 User Passwords

- Protects access to system
- Each user is assigned a user name and an access level

Custom Units

- 8 analog engineering units
- 8 binary units
- 8 multistate units with 8 states, 30 characters each

Graphic Files

- Supports GIF, TIFF, JPG, PNG, and SWF

SMART-Net™ Port

- Networks up to 16 SMART-Sensors™

1536 Network In Points

512 Network Out Points

- The total maximum number of writes and shares to other devices

Real-Time Clock

Warranty

- 5 years

Certification

- BTL Listed (B-OWS)
- BTL Listed (B-BC)
- UL 916 Listed
- FCC CFR 47 Part 15/B
- CE

ORDERING

MPW-C

- MACH-ProWebCom™ controller/Web server

ACCESSORIES

MP-DINRAIL

- Two-piece adapter kit to mount controller onto 35 mm x 7.5 mm top hat DIN rail. DIN rail not included

MPP-IO

- MACH-ProPoint I/O expansion module with 12 universal input and 8 outputs

MPP-IO-H

- MPP-IO with HOA (Hand/Off/Auto) switches and potentiometer overrides for each output

MPP-IO-U

- MACH-ProPoint I/O expansion module with 12 universal inputs and 8 universal outputs

MPP-IO-U-H

- MPP-IO-U with HOA (Hand/Off/Auto) switches and potentiometer overrides for each output

MPP-IO-DL

- Door label sheet for MP-S, MP-S-H, MPW-S, MPW-S-H, MPP-IO, MPP-IO-H, MPP-IO-U, and MPP-IO-U-H

MPP-I

- MPP Input expansion module with 24 universal inputs

MPP-I-DL

- Door label sheet for MPP-I

MPP-O

- MACH-ProPoint Output expansion module with 16 universal outputs

MPP-O-H

- MPP-O with HOA (Hand/Off/Auto) switches and potentiometer overrides for each output

MPP-O-DL

- Door label sheet for MPP-O

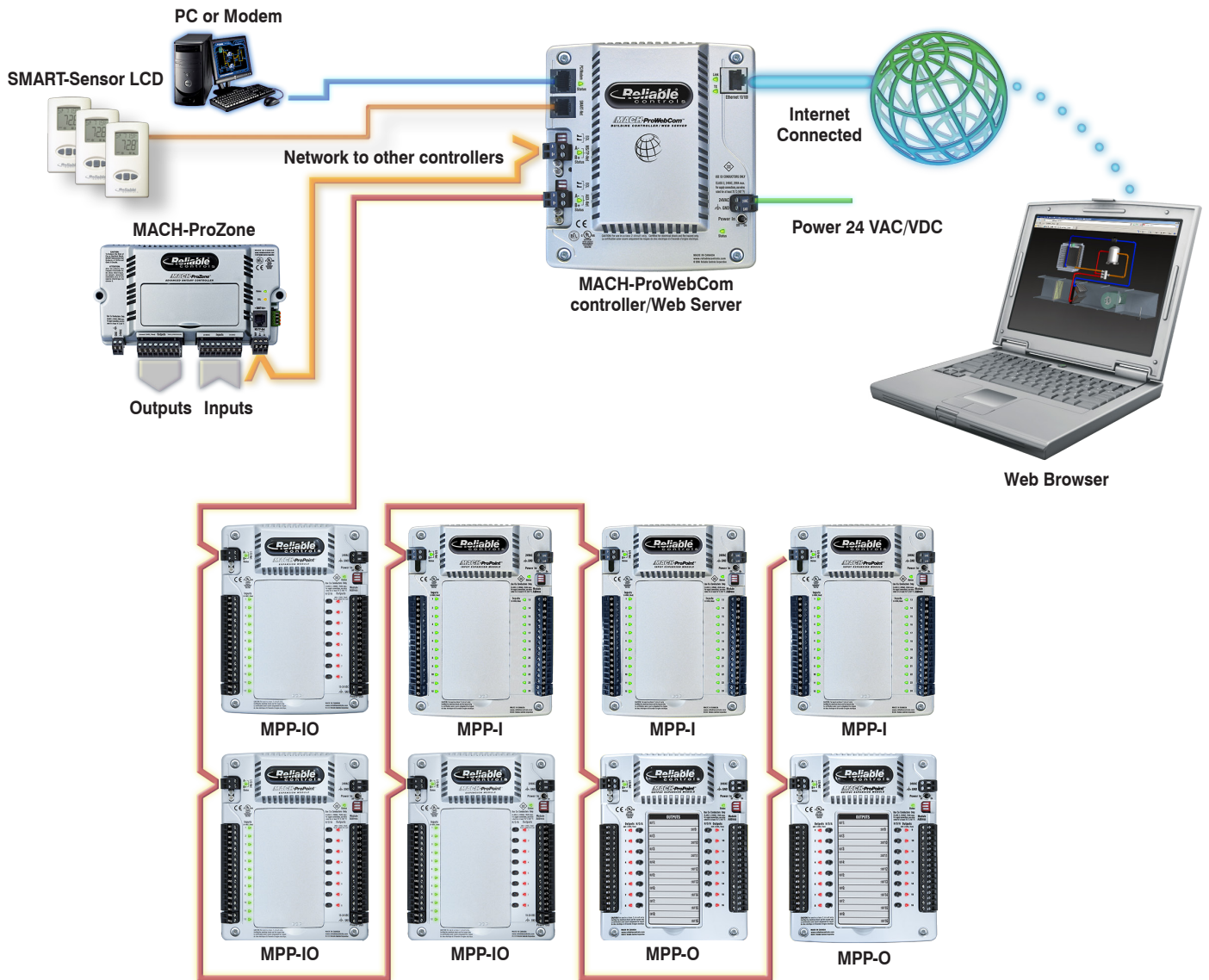
SS-RJ11TB-B, SS-RJ11TB-C

- SMART-Net breakout connector RJ-11 to terminal block

SS-X

- SMART-Sensor Network Expansion Board

APPLICATION DIAGRAM



Connect up to 8 MACH-ProPoint expansion modules of any mix with a maximum input count of 192, and a maximum output count of 128 per controller. Expansion modules are daisy-chained to the AUX-Net port of the controller in any combination.



The Reliable Controls® MACH-ProWeb™ combines the field controller, configurable Web server, and browser driven workstation into a single device which is simple to use, flexible to engineer, and highly economical.

FIELD CONTROLLER

Program the MACH-ProWeb™ point database, Control-BASIC sequence, and graphics just as you would for any other Reliable Controls® product. The MACH-ProWeb™ is a fully functional BACnet Building Controller (B-BC).

5000DNS MACH-ProWeb - Inputs

Input Name	Value	Auto/Man	Range	Calibration	Average	D	Alarm	Label	Object
1 ACS-SAT	20.0 °C	Auto	10K_40 >120	0.1000064					AII1
2 ACS-MAT	22.2 °C	Auto	10K_40 >120	0.3000064					AII2
3 ACS-RAT	24.5 °C	Auto	10K_40 >120	0.1000064					AII3
4 ACS-SFA	0.9 Amps	Auto	0.0 >100	0.0064					AII4
5 ACS-RFA	7.8 Amps	Auto	0.0 >100	0.0064					AII5
6 ACS-SPARE	0.0	Auto	Unrated	0.0064			Y		AII6
7 ACS-SAT	21.1 °C	Auto	10K_40 >120	-0.1000064					AII7
8 ACS-MAT	22.7 °C	Auto	10K_40 >120	0.2000064					AII8
9 ACS-RAT	24.5 °C	Auto	10K_40 >120	0.2000064					AII9
10 ACS-SFA	8.4 Amps	Auto	0.0 >100	0.0064					AII10
11 ACS-RFA	4.7 Amps	Auto	0.0 >100	0.0064					AII11
12 ACS-SPARE	0.0	Auto	Unrated	0.0064			Y		AII12

5000OUTS MACH-ProWeb - Outputs

Output Name	Value	Auto/Man	Switch	Range	0%	100%	Delay	Min	Off	Min On	S	D	Alarm	Label	Program	In Service	Obj
1 MCH-STAT	Start	Auto	Auto	Stop/Start											13	Yes	B01
2 HTG-FS	Stop	Auto	Auto	Stop/Start											16	Yes	B02
3 HTG-FS	Start	Auto	Auto	Stop/Start											17	Yes	B03
4 HTG-FS	Start	Auto	Auto	Stop/Start											18	Yes	B04
5 HTG-S2ENA	Enabled	Manual	Auto	Disabled/Enable											System On	205	
6 HTG-S2ENA	Disabled	Auto	Auto	Disabled/Enable											15	Yes	B06
7 HTG-SEC-V	11.1 %	Auto	Auto	0.0 >100%	0.00	10.00									14	Yes	A07

5000PRGS MACH-ProWeb - Control-BASIC

Program Name	Run/ Auto/Man	Timer	Time	Left	Size	Ext	Label
1 HTG-PRG1	Yes Auto	Enabled			2472	No	
2 ECH-PRG1	Yes Auto	Enabled			1295	No	
3 CALCS	Yes Auto	Enabled			209	No	

System Tree

- MACH-ProSys (2000)
 - MACH-ProWeb (5000)
 - Object List
 - System Groups
 - Inputs
 - Outputs
 - Variables
 - PID-Loops
 - Schedules
 - Calendars
 - Multi-point Trend Logs
 - Single-point Trend Logs
 - Notification Classes
 - Programs
 - RCP Weekly Schedules
 - RCP Trend Logs
 - RCP Runtime Logs
 - Arrays
 - Tables
 - SMART-Sensors
 - MACH-Stat (5001)
 - MACH-Stat (5002)
 - MACH-Stat (5003)
 - MACH-Air (5004)
 - MACH-Air (5006)
 - MACH-Air (5007)
 - MACH-Air (5008)
 - MACH-Air (5009)
 - MACH-Air (5010)

Right-click to access MACH-ProWeb Tools

- Large Icons
- Show Icons
- Font Options
- Allow docking
- Hide
- Refresh System
- Panel File
- Sign-On Log
- Sort
- ReInitialize Device
- Load Descriptors
- Manual Points Report
- Initialize Point Sharing
- MACH-ProWeb Tools
 - Resource Manager
 - Web Users
 - Tree Builder
- BACnet Advanced
- Properties..

WEB SERVER

Using the MACH-ProWeb™ Tools in RC-Studio® 2.0, it is extremely simple to select and post resource files to the MACH-ProWeb™ and manage future changes.

MACH-ProWeb - Tree Builder

To make a custom tree for the MACH-ProWeb interface, drag and drop any of the following items into Tree Builder: System Groups, Schedules, Trend Logs, Runtime Logs and Alarms. Items within the tree can be renamed to any name and relocated anywhere on the main tree or within custom folders nested two deep. Click the Send button to post your completed tree to the MACH-ProWeb.

- Main
- Rooftop Summary
- SMT-Room
- Security System
- Optimal Start-Stop
- AC Units
- Floors
- VAVs
- Alarms
- Schedules
- Calendars
- Trend Logs
- Runtime Logs

Send Add Folder Close

With the MPW Tree Builder, drag and drop graphics and objects to make your own customized navigation tree.

MACH-ProWeb - Resource Manager

Selected Workstation Resources

- Support Files
- Resource Files
 - 1GRP1 - MAIN-MENU
 - 1GRP2 - MECHANICAL SUMMARY
 - 1GRP3 - Upper VAV Summary
 - 1GRP4 - AC-1 Upper Interior
 - 1GRP5 - AC-2 Upper Exterior
 - 1GRP6 - AC-3 Production
 - 1GRP7 - AH-1 Lwr Fir OA
 - 1GRP8
 - 1GRP9 - Exhaust Fan Summary
 - 1GRP10
 - 1GRP11 - Production Floorplan

Resources on MACH-ProWeb

- Support Files
- Resource Files
 - 1GRP1 - MAIN-MENU
 - 1GRP2 - MECHANICAL SUMMARY
 - 1GRP3 - Upper VAV Summary

Used Space: 15,332,764 bytes (14.62 MB)
 Free Space: 244,714,077 bytes (233.57 MB)
 Total Capacity: 260,046,848 bytes (248.24 MB)

Drag and drop selected PC workstation resources using the MPW Resource Manager.

MACH-ProWeb Tools

- Resource Manager
- Web Users
- Tree Builder

5000MPWPWDS MACH-ProWeb - Web Users

User Name	Password	Level	Group	Permissions	Enable
1 Public	*****	3	MAIN-MENU	Permissions	<input type="checkbox"/>
2 Bob	*****	3	MAIN-MENU	Permissions	<input type="checkbox"/>
3 Doug	*****	6	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
4 Tom	*****	6	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
5 Roland	*****	7	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
6 Robin	*****	6	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
7 Levi	*****	6	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
8 Kent	*****	1	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
9 Richard	*****	6	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
10 Robert	*****	9	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
11	*****	3	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>

Mode Print Abort Close Import

User Permissions

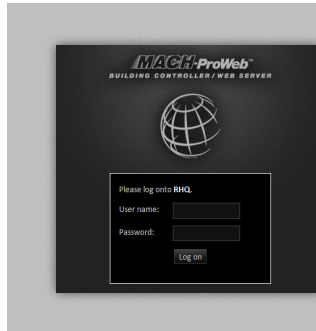
- Change End-User Values
- Change Operator Values
- Change Auto/Manual
- Change Inputs
- Change Outputs
- Change Variables
- Change PID Loops
- Change Weekly Schedules
- Change Special Events
- Change Calendars
- Auto Log Off 15 min.
- Change Arrays
- Change System Date and Time
- Change Advanced BACnet
- Must Enter Change Reason
- Acknowledge Alarms
- View Alarms
- View Audit Trail
- View Online Help
- Show Tree
- Display Logon for Public user

OK Select All Unselect All Cancel

With the MPW Web Users tool, assign public and private Web users with complete permission control.

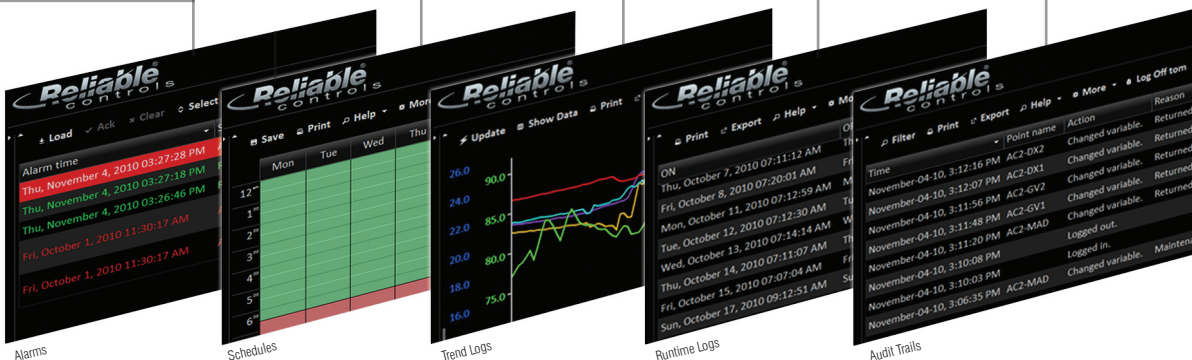
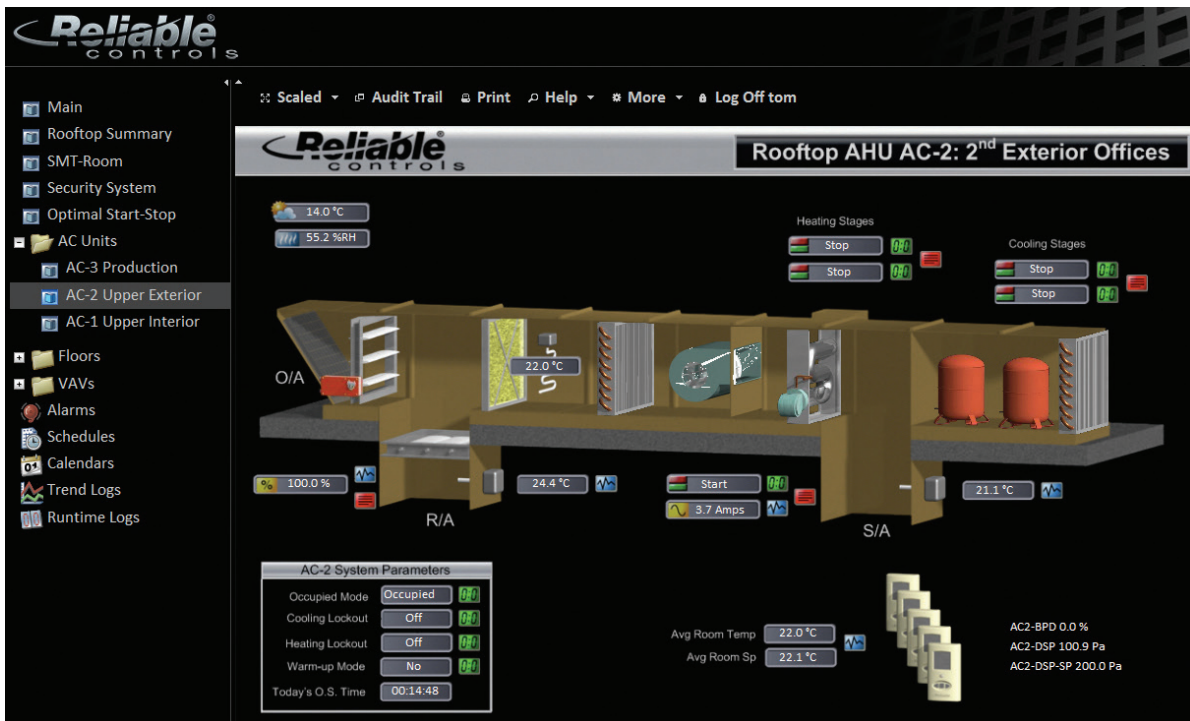
WORKSTATION

The MPW interface provides total functionality required for day-to-day building operations, and is a BTL-listed BACnet Operator Workstation (B-OWS). Using a standard browser (IE 8, Firefox 3, Chrome 5, Safari 5, or greater) on a PC or Mac, enter the URL of the MACH-ProWeb™ and navigate through the system to access and print point values, alarms, schedules, trend logs, runtime logs, and audit trails.



Public users can access the MACH-ProWeb™ URL and associated system graphics assigned for public views.

Private users log in with credentials.



The MACH-ProWeb™ is the first three-in-one device of its kind, combining B-BC, B-OWS, and Web server capabilities into a single package with an installed footprint of a typical building controller.

Dealer Information: